IN THE SPECIFICATION

Please replace the paragraph 0026 with the following rewritten paragraph:

Figures 1A and [[2B]] 1B illustrate a fluid treatment system 1, which can be used in a variety of fluid treatment applications. For example, the fluid treatment system 1 can be used to treat fluids in gas form (e.g., air or natural gas) or in liquid form, depending on the functions of vessels 3a-3e included in the fluid treatment system 1. For example, each one of the vessels 3a-3e in the fluid treatment system 1 can include adsorption material adapted for hydrogen purification. Moreover, the fluid treatment system 1 can be used in a wide range of temperature and pressure operating conditions.

Please replace the paragraph 0027 with the following rewritten paragraph:

The fluid treatment system 1 includes the vessels 3a-3e and a valve assembly 2. The valve assembly 2 includes a first valve element 8, a second valve element 13, and a driving unit 12. The first valve element 8 can be made of metal, polymer, or any other formable material that exhibits the necessary properties for handling fluid to be treated. The first valve element 8 is preferably cylindrical in shape and can be scaled up or down to accommodate a wide variety of configurations. The first valve element 8 includes a first disc 16 and a second disc 17. The second disc 17 is shown as two separate portions: a first portion 17a and a second portion 17b. The second disc 17 can be constructed such that the first portion 17a and the second portion 17b are separately-manufactured components fixedly attached by pins 18 (as shown in Figure 2) or, alternatively, fasteners, adhesive bonding, brazing, soldering, welding, or any other means of attaching suitable for use in a fluid treatment system. When the first and second portions 17a and 17b are separately-manufactured components, they are attached in a substantially gas-tight ~~manger~~ manner. For purposes of this document, "substantially gas-tight" refers to a condition where either no amount or only a minimal

amount of fluid is allowed to escape, as is known in the art. Alternatively, the first and second portions 17a and 17b can be formed as a unitary component such that the first and second portions 17a and 17b are cast, molded, machined, or otherwise formed as a single component from a formable material.

Please replace the paragraph 0030 with the following rewritten paragraph:

The first disc 16 includes five holes 22a-22e which extend from a first surface 23a to a second surface 23b, and is fixedly mounted to a frame 15 (Figures 1A and 1B). The quantity of the holes 22a-22e can differ from the embodiment shown in Figure 2, but are preferably equal to the number of the apertures 9a-9e in the second disc 17. Also, the [[hole]] holes 22a-22e are arranged such that each hole is aligned with one of the apertures 9a-9e when the first valve element 8 is in one of its predetermined positions, as shown in Figures 8A-8E. On the first surface 23a, the first disc [[15]] 16 includes a circular recess 24 positioned around each of the holes 22a-22e. Each of the recesses 24 is adapted to receive a sealing component 25 and a seating component 26. The sealing and seating components 25 and 26 are adapted to ensure substantially gas-tight sealing between the first and second discs 16 and 17 at all times during operation of the valve assembly 2.

Please replace the paragraph 0031 with the following rewritten paragraph:

Additionally, the seating components 26 are adapted to ensure that the first and second discs 16 and 17 can be easily moved relative to one another (e.g., in an intermittent rotation produced by the driving unit 12). For example, the seating components 26 can be formed of a low-friction material (e.g., plastic) or can be polished to an extent necessary to provide a low-friction surface, as [[in]] is recognized in the art. Alternatively or additionally,

the first surface 23a and the first surface 19a can be adapted (e.g., polished) such that the first and second discs 16 and 17 can be easily moved relative to one another.

Please replace the paragraph 0033 with the following rewritten paragraph:

The second valve element 13 is preferably cylindrical in shape and can be scaled up or down to accommodate a wide variety of configurations. The second valve element 13 includes a first disc 28 and a second disc 29. The second disc 29 is shown as two separate portions: a first portion 29a and a second portion 29b. The second disc 29 can be constructed such that the first portion 29a and the second portion 29b are separately-manufactured components fixedly attached by pins 18 (as shown in Figure 4) or, alternatively, fasteners, adhesive bonding, brazing, soldering, welding, or any other means of attaching suitable for use in a fluid treatment system. When the first and second portions 29a and 29b are separately-manufactured components, they are attached in a substantially gas-tight ~~manger~~ manner. Alternatively, the first and second portions 29a and 29b can be formed as a unitary component such that the first and second portions 29a and 29b are cast, molded, machined, or otherwise formed as a single component from a formable material.

Please replace the paragraph 0036 with the following rewritten paragraph:

As shown in Figures [[5,]] 6A[[,]] and 6B, the second portion 29b includes an inlet 33 that is aligned with the aperture 9f. Due to the substantially gas-tight seal between the first and second portions 29a and 29b, the aperture 9f and the inlet 33 essentially perform as a single fluid conduit. The second portion 29b also includes channels 32c and 32d, which are adapted to respectively align with channels 32a and 32b of the first portion 29a. In this way, the channels 32a-32d essentially perform as two fluid conduits that direct fluid from the apertures 9g and 9h out of the second valve element 13 through the third surface 31c.

Please replace the paragraph 0039 with the following rewritten paragraph:

The vessels 3a-3e can include a variety of fluid treatment materials, depending on the desired process. For example, the vessels 3a-3e can be used for treating air, natural gas, or any other fluids known in the art using adsorbent material. Adsorbent or absorbent beds may employ a variety of known materials that, singly or in combination, selectively remove contaminants from the fluid stream. Exemplary contaminant/adsorbent systems are hydrocarbon vapors on activated carbon, hydrogen sulfide on metal and metal oxide doped activated carbon, ~~mercaptains~~ mercaptans and other sulfur-bearing organics on either of the above adsorbents or zeolites, and water on silica gel. In an exemplary embodiment, the ~~vessel~~ vessels 3a-3e can each include adsorbent materials adapted to perform a hydrogen purification in a PSA process.

Please replace the paragraph 0046 with the following rewritten paragraph:

The first and second valve elements 8 and 13 are arranged to be selectively positioned in one of five positions (Figures 8A-8E), based on the intermittent driving of the driving unit 12. Specifically, the position of each [[of]] valve element is changed by intermittently rotating the associated second disc relative to the corresponding first disc, which remains stationary throughout operation of the valve assembly 2. Each position is relative to a particular vessel and, more specifically, to a particular one of the first port openings 4 or of the second port openings 5. For example, as illustrated in Figure 8A, the first valve element 8 is in: a first position with respect to the vessel 3a; a second position with respect to the vessel 3b; a third position with respect to the vessel 3c; a fourth position with respect to the vessel 3d; and a fifth position with respect to the vessel 3e. Referring to a PSA process, the first position corresponds to an adsorption step, the second position corresponds to a co-current

depressurization step, the third position corresponds to a counter-current depressurization step, the fourth position corresponds to a purge step, and the fifth position corresponds to a repressurization step.

Please replace the Abstract with the revised Abstract on the following separate sheet.

ABSTRACT

A valve assembly ~~is provided which can be particularly advantageous~~ for use in a gas purification system ~~(e.g., for purifying hydrogen)~~ having a plurality of vessels each having a first port opening and a second port opening. The gas purification system includes a first valve element ~~or assembly~~ having a first aperture to selectively connect a first port opening of ~~one of the plurality of vessels~~ a vessel to an outlet of the first valve element. The gas purification system also includes a second valve element ~~or assembly~~ having a second aperture to selectively connect a second port opening of ~~one of the plurality of vessels~~ a vessel to an input of the second valve element. Also provided are a motor adapted to rotate continuously and a converting mechanism that converts continuous movement of the motor into intermittent movement. The first and second valve elements are intermittently moved by the motor and the converting mechanism such that the intermittent movement changes the vessel connected to the second aperture and the vessel connected to the first aperture.